welded to the sleeve **62**, the sleeve **62** cannot rotate when the rotatable member **78** is locked to the shaft member **80** by some of the ball bearings **86**.

The conveyor belt and its load are supported on numerous conveyor idlers **60** along the length of the conveyor belt. Each conveyor idler **60** can withstand a certain amount of torque (holdback torque) in the reverse direction, and thus the conveyor belt and its load are prevented from running backwards. In practice, the applicant has found that if about one out of every three conventional conveyor idlers is replaced with a conveyor idler according to the invention, sufficient holdback torque is provided to prevent a conveyor belt from running backwards. More than one locking mechanism **74** may be provided within a conveyor idler to increase its holdback torque.

Referring now to FIG. **17**, increasing the number of ramps **104.1** from eight to ten on the shaft member **80**. **1**, increases the holdback torque of the conveyor idler. The shaft member **80.1** has cut-outs **112** to reduce its mass.

Referring now to FIGS. **18** to **20**, a conveyor idler **60.1** has a sleeve **62.1** rotatably supported on a shaft **68.1** supported by bearings **70.1** located in end caps **72.1**. A cylindrical shaft member **80.1** is fixed to the shaft **68.1** by a key **82**. A rotatable member **78.1** is fixed to one of the end caps **72.1** which is in turn fixed to the sleeve **62.1**.

Locking members in the form of pins **86.1** are reciprocally mounted in holes **114** in the shaft member **80.1**. The pins **86.1** are biased into abutting relationship with the rotatable member **78.1** by springs **116**. The rotatable member has a pin bearing surface **118** in the form of a ramp **80.1** with a step **120** (see FIG. **20**).

In use, when the sleeve **62.1** rotates in a forward direction, relatively speaking, the pins **86.1** ride up the ramp **80.1** and down the step **120**. If the sleeve **62.1** is rotated in a reverse direction, relatively speaking, the pins **86.1** will move down the ramp **80.1** until one of the pins **86.1** abuts the step **120** and locks the rotatable member **78.1** to the shaft member **80.1** thereby prevent any further rotation of the sleeve **62.1** in the reverse direction. Only one pin **86.1** may be used or more than two pins **86.1** may be used. For example, four pins **86.1** may be used and be located at **900** intervals in the shaft member **80.1**.

It will be appreciated that many modifications or variations of the invention are possible without departing from the spirit or scope of the invention.

What is claimed is:

1. A conveyor idler including a sleeve having an outer surface and an inner surface, a shaft about which the sleeve can rotate in a forward direction, a locking mechanism for preventing the sleeve from rotating in a reverse direction, but which locking mechanism permits rotation of the sleeve in the forward direction, the locking mechanism being located within the sleeve and having a shaft member fixed to the shaft, with at least one locking member which can move between an unlocked position in which the sleeve can rotate in the forward direction and a locked position in which the locking member locks the sleeve to the shaft member to prevent rotation of the sleeve in the reverse direction.

2. The conveyor idler of claim **1** wherein the shaft member includes an outer surface with a plurality of circumferentially spaced ramps thereon and wherein the at least one locking member can move along one of the ramps between the unlocked position and the locked position.

3. The conveyor idler of claim **2** wherein the at least one locking member is a ball bearing or a roller bearing.

4. The conveyor idler of claim **1** wherein the locking mechanism includes a rotatable member fixed directly or indirectly to the sleeve, so that the rotatable member is rotatable with the sleeve in the forward direction.

5. The conveyor idler of claim **4** wherein the at least one locking member is interposed between the shaft member and the rotatable member so that the at least one locking member can indirectly lock the sleeve to the shaft member via the rotatable member.

6. The conveyor idler of claim **5** wherein the shaft member has two side faces and an outer surface with a plurality of circumferentially spaced ramps on the outer surface, with locking members located on at least some, and preferably on all, of the ramps, and wherein the rotatable member defines a race with the locking members being sandwiched between the race and the ramps of the shaft member, and wherein the locking members are movable along their ramps between locked and unlocked positions.

7. The conveyor idler of claim **6** wherein the rotatable member has two opposed side faces between which the shaft member and the locking members are sandwiched.

8. The conveyor idler of claim **7** wherein a spacer is interposed between each side face on the one hand, and the shaft member and the locking members on the other hand.

9. The conveyor idler of claim **6** wherein the race of the rotatable member includes a groove for the locking members.

10. The conveyor idler of claim **4** wherein the rotatable member is directly fixed to the sleeve by being welded to the inner surface of the sleeve by a weld or welds.

11. The conveyor idler of claim **4** wherein the shaft member is made of a harder material than the rotatable member.

12. A conveyor idler having an outer surface and an inner surface, a shaft about which the conveyor idler can rotate in a forward direction, a braking mechanism for preventing the conveyor idler from rotating in a reverse direction, but which braking mechanism permits rotation of the conveyor idler in the forward direction, the braking mechanism being located within the conveyor idler and includes at least one brake element which can move between a first position in which the conveyor idler can rotate in the forward direction, and a second position in which the brake element prevents the conveyor idler from rotating in the reverse direction.

13. The conveyor idler of claim **12** wherein the braking mechanism includes a brake guide for the at least one brake element.

14. The conveyor idler of claim **13** wherein the brake guide is secured to the shaft.

15. The conveyor idler of claim **13** wherein the brake guide has an outer surface with a plurality of recesses each having a brake surface and wherein the at least one brake element is located on one of the brake surfaces and wherein the at least one brake element is moveable on its brake surface between the first position and the second position.

16. The conveyor idler of claim **15** wherein a plurality of brake elements are provided, with each brake element being located on its respective brake surface.

17. The conveyor idler of claim **12** wherein the at least one brake element is a ball bearing or a roller bearing.

18. The conveyor idler of claim **13** wherein the at least one brake element is interposed between the brake guide and the conveyor idler.

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